

212KT04.INS R04 Installation Manual

MODELS: GTC 200-1M, 2M, 1L, 2L
1MH, 2MH, 1LH, & 2LH



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1.1 INTRODUCTION

1.1.1 About This Manual

This manual introduces the functions and operations, as well as installation and maintenance procedures for the Kraus Automatic Temperature Compensation system.

In an effort to help our customers take full advantage of our state-of-the-art products, we have provided this handbook to aid in the initial set up and later to be used as a reference guide, should the need arise.

The three divided sections are:

Section 1 INFORMATION

Gives general information on system functions as well as cautionary advice.

Section 2 INSTALLATION

Gives all information needed to successfully install and operate the system, as well as technical illustrations to aid in understanding text.

Section 3 TECHNICAL DATA

Gives information on products that make up the system, in the form of drawings, manufacturer's literature and references to related systems and products.

These three sections are set up in such a way that information is easily understood and instantly available to those who need it, whether they are engineers, technicians or supply managers.

1.1 INTRODUCTION**1.1.2 Helpful Hints and Warnings**

Throughout this handbook, in the left hand margin, there will be indicators with text, to give various hints and warnings. The following are examples of what you will see, and their meanings:

**SUGGESTION**

PROVIDES A HINT ON HOW TO BEST USE THE EQUIPMENT OR ADVICE ON PROPER PROCEDURES.

**ATTENTION**

PROVIDES NOTICE TO AN IMPORTANT ASPECT OF SYSTEM OPERATION.

**CAUTION**

PROVIDES A WARNING TO PREVENT DAMAGE TO EQUIPMENT AND/OR HUMAN INJURY.

Kraus Global Inc. assumes no responsibility for personal injury or equipment damage caused by non-observance of safety warnings.

1.1 INTRODUCTION

1.1.3 Service and Product Support

Should you experience any difficulties in system operation, and you have referred to the troubleshooting tables in the handbook (Section 2.2) without success, customer assistance is available through our Service Department; phone and fax numbers are listed below.

The procedure to receive such assistance is as follows:

1. Document the following information:

- i** System disfunctions
- ii** Any corrective measures taken
- iii** System Model Number
- iv** System Serial Number
- v** Purchase Order Information
- vi** Date of installation
- vii** Equipment location (i.e. city, address etc...)

2. Call or Fax our Service Department at:

Company Service number 1(204) 663-3601
 Company Fax number 1(204) 663-7112

One of our qualified personnel will provide assistance in getting your system operational.

**1.2 PRODUCT
INFORMATION****1.2.1 System Components**

The following is a list of operating components used in this installation, along with a brief explanation of their operation:

ATC Board

Takes the signals from the temperature probe and flow meter, compensates for temperature deviation from 15°C, then sends the compensated signal back to the main processor board.

Adapter Board

Diverts the signal from the pulser to the ATC board, then returns the compensated signal from the ATC board to the main processor board. Also supplies a +5VDC and handle switch signals to the ATC board and display.

Intrinsic Safety (I.S.) Barrier

Energy limits the temperature probe signal, then sends the same signal onto the ATC board.

Temperature Probes

Converts temperature of the product to a corresponding signal that is sent to the ATC board, via the I.S. Barrier.

ATC Display Board

Gives a visual display of product temperature, flow rate and uncompensated volume. Also indicates error conditions.

Probe Connector Assembly

Provides secure electrical connection between the temperature probe(s) and I.S. Barrier.

2.1 SYSTEM SET UP**2.1.1 Site Preparation****CAUTION**

THE FOLLOWING LIST OF PRECAUTIONS SHOULD BE FOLLOWED BEFORE INSTALLATION.

- Extreme caution should be used to ensure that no ignition sources exist.
- The dispensing area should be roped off or isolated from public use.
- Dispenser station operator should be made aware of the work that needs to be completed to prevent accidental “turn on” of the pump.
- Any main electrical disconnection should be labeled or locked to prevent accidental power up.

2.1 SYSTEM SET UP

2.1.2 Installation Requirements



ATTENTION

TO COMPLETE THE INSTALLATION, THE FOLLOWING POINTS SHOULD BE TAKEN INTO CONSIDERATION:

- Any electrical installation should be carried out by a registered electrician.
- Any gas dispensing connections should be made by qualified and experienced personnel.
- Installation must be performed in accordance with the relevant standards, laws and by-laws governing the type of application.

2.1 SYSTEM SET UP

2.1.3 Unit Configuration

The GTC 200 must be configured for installation. This is done by setting the DIP switches on the ATC circuit board (see Figure 13).

Options can be changed by setting the eight switches in accordance with the table below:

Table 1: ATC Board DIP Switch Settings

GTC 200

SWITCH #	OPTION	SWITCH STATUS
1	Selects whether product 1 is gasoline or diesel	OFF = GASOLINE
2	Selects whether product 2 is gasoline or diesel	OFF = GASOLINE
3	Selects whether product 3 is gasoline or diesel	OFF (N/A)
4	Selects whether product 4 is gasoline or diesel	OFF (N/A)
5	Selects Blender (2B kits), ECAL "LEARN" mode (ECAL equipped dispensers)	ON = BLENDER, LEARN
6	Selects one or two product dispenser	ON = 2 Product
7	Selects pump model being retrofitted – PRE-MODULAR vs MODULAR / MPD / LEGACY	OFF = MPD, LEGACY OR MODULAR
8	ATC ON or OFF	ON = ATC ON

2.1 SYSTEM SET UP**2.1.3.1 Electronic Calibration with GTC 200-ECAL ATC**

Available on High Speed (H) Only

Electronic calibration on the GTC 200-1MH, 1LH and 200-2MH, 2LH can be achieved by following steps 1 to 10 below. This is done by setting the DIP switches on the ATC circuit board (see Figure 13), and the ATC display switches (see Figure 15).

1. Set DIP switch #8 to the OFF position (ATC OFF).
2. Set ATC Display to show Side A Volume.
3. Set DIP switch #5 to the ON position (LEARN MODE ON). The ATC display will show "-1.-".
4. Lift the Side A dispenser pump handle and start the calibration fill. For 0.05% precision in the calibration factor the calibration fill must be of at least 200 litres.
5. When the fill is complete lower the pump handle.
6. Read the volume on the ATC display and use the INCREMENT button switch (SW2 on the ATV board) or the DECREMENT switch (SW3) to adjust the volume to the actual volume dispensed.
7. When the ATC display is showing the correct volume, either use DIP switch #5 to exit LEARN MODE or switch the ATC display to show the Side B Volume.

If you have switched the ATC display to show Side B volume, then follow the same procedure as outlined in steps 4 to 6 above to calibrate Side B. Then use DIP switch #5 to exit LEARN mode.

8. Recheck calibration on both sides of pump using ATC display.
9. If your pump is equipped with its own ECAL feature, now perform Gilbarco calibration instructions such that the volume displayed on the pump matches the volume displayed on the ATC display.
10. Activate ATC with DIP switch #8 if required. If system not legally inspected yet, leave OFF.



ATTENTION

THE INCREMENT SWITCH WILL ONLY ALLOW THE VOLUME TO BE INCREMENTED TO +12.5% OF THE UNCALIBRATED VOLUME AND THE DECREMENT SWITCH WILL ONLY ALLOW THE VOLUME TO BE DECREMENTED TO -12.5% OF THE UNCALIBRATED VOLUME.

2.1 SYSTEM SET UP

2.1.3.1 Electronic Calibration with GTC 200-ECAL ATC (CONT'D)



NOTE

-
- **WHEN IN LEARN MODE** LIFTING THE PUMP HANDLE WILL SET THE CALIBRATION TO **00.00%** IF NO FUEL IS DISPENSED OR IF NEITHER THE **INCREMENT** OR **DECREMENT** SWITCHES ARE USED.
 - **WHEN IN LEARN MODE** ONLY ONE (1) FUEL TRANSACTION PER PUMP SIDE IS PERMITTED. ALL ATTEMPTS TO START ANOTHER SALE WILL CAUSE A PULSER ERROR. TO CORRECT AN ERRONEOUS CALIBRATION THE **LEARN SWITCH (DIP SWITCH #5)** MUST BE TURNED TO THE **OFF** POSITION AND THEN BACK TO THE **ON** POSITION.
-

2.1 SYSTEM SET UP

2.1.4 Component Installation



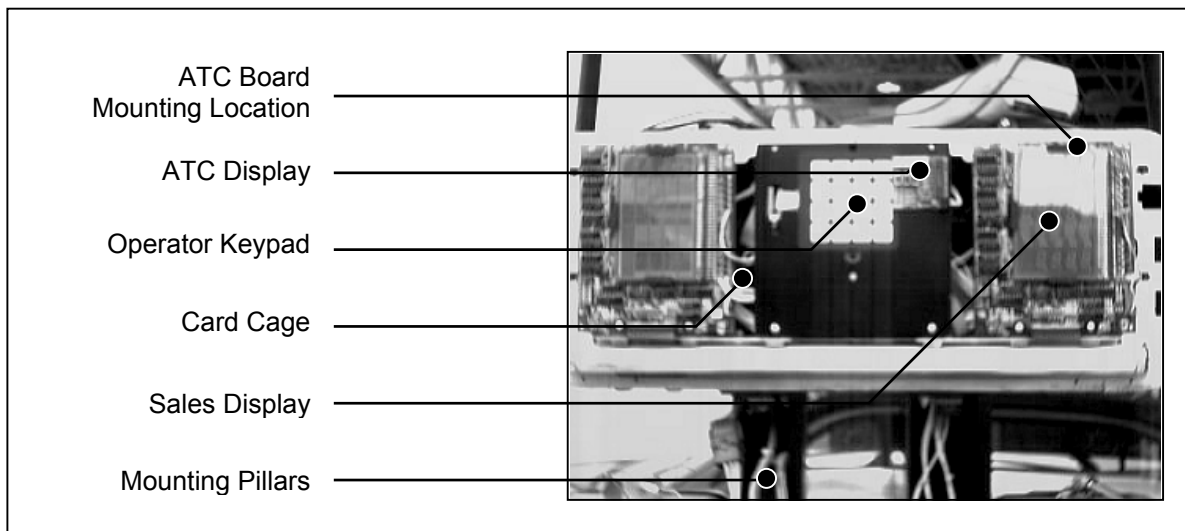
SUGGESTION

COMPLETE COMPONENT INSTALLATION DIAGRAMS ARE LOCATED IN SECTION 3.2 - CONNECTION DIAGRAMS.

1. Open front panel of display, on top of pump, to expose main control boards (see Figure 1).

Figure 1

Display Head Controls



Salesmaker Model Shown

2. If possible, disconnect electrical power supply at main breaker or remove fuse located inside the display unit.

2.1 SYSTEM SET UP

2.1.4 Component Installation

2.1.4.1 THERMAL TEST WELL AND TEMPERATURE PROBE

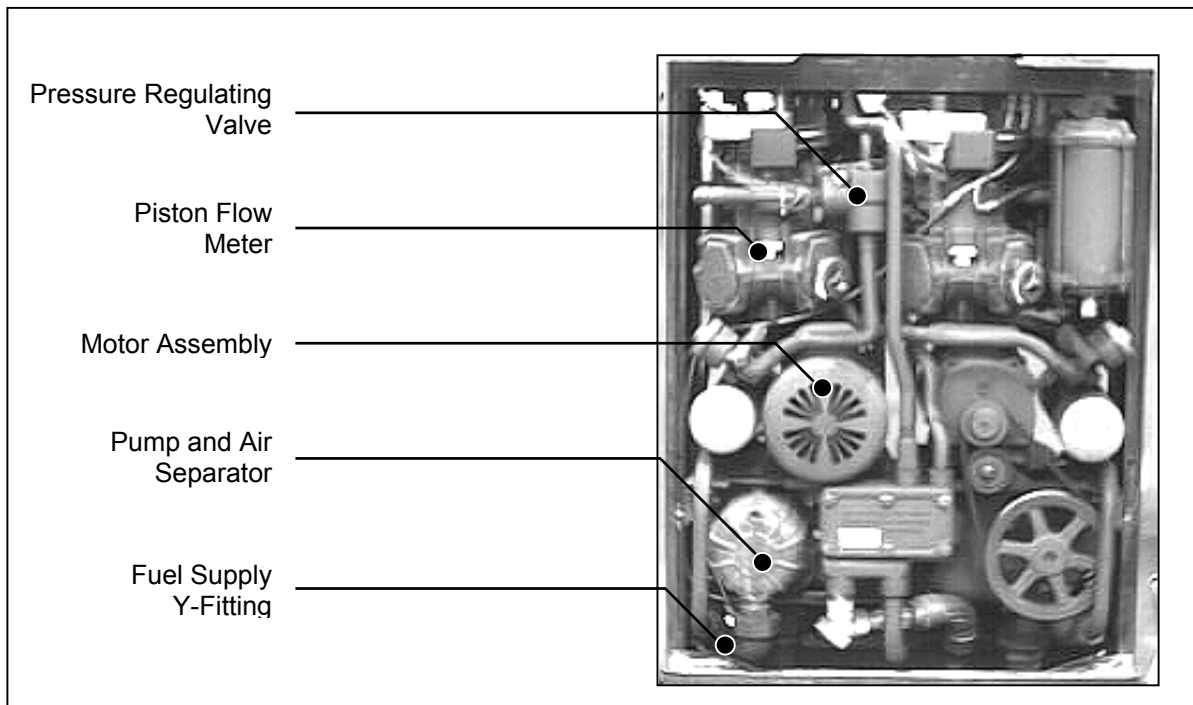
For Salesmaker and Dual 1 Product Highline Models

1a. Thermal Test Well Connection (In the case of having Pressure Regulating Valves)

1. Remove the two lower panels to expose the main pump assembly (see Figure 2).

Figure 2

Main Pump Enclosure



Salesmaker Model Shown

2. Locate the pressure regulating valve before each meter (see Figure 2).
3. Remove the valves from each section.



CAUTION

DUE TO THE PRESENCE OF COMBUSTIBLE GASSES, DO NOT DRILL PROBE HOLES OR SOLDER FITTINGS USING A POWER DRILL WHILE THE PIPE IS CONNECTED TO THE PUMP ASSEMBLY.

2.1 SYSTEM SET UP

2.1.4.1 THERMAL TEST WELL AND TEMPERATURE PROBE

For Salesmaker and Dual 1 Product Highline Models

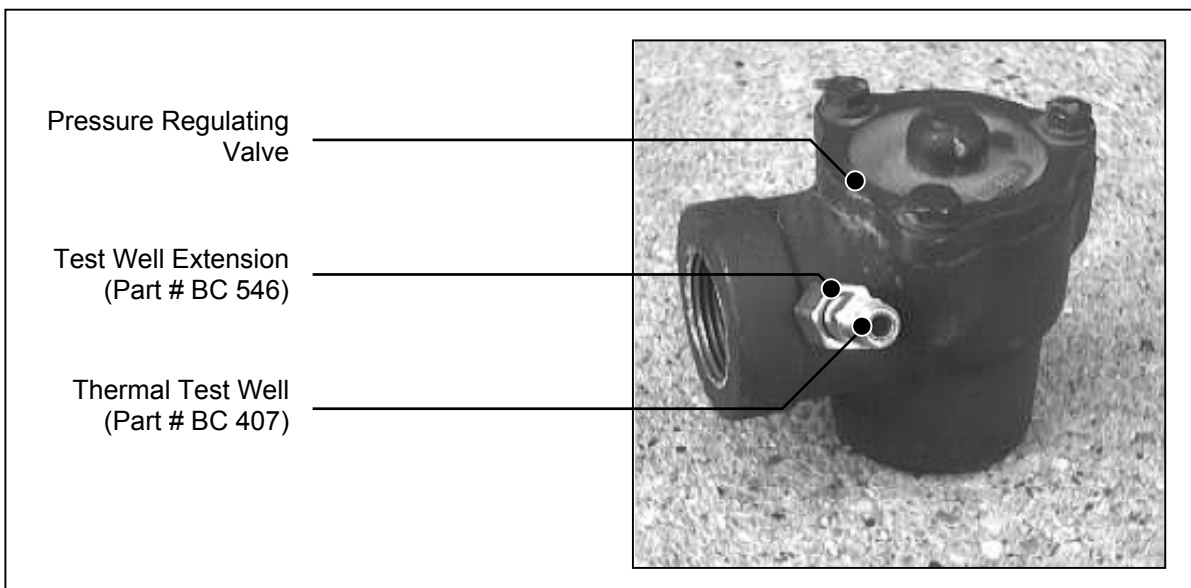
1a. Thermal Test Well Connection (cont'd)

(In the case of having Pressure Regulating Valves)

4. With the valve mounted securely, drill 1 hole of size Q or 21/64", in the leg that leads to the meter, and tap for 1/8" NPT (see Figure 3).

Figure 3

Thermal Well Connection



The following guidelines should also be followed for installing the test well:

- The hole should be drilled so that the extension will be at an angle within 45° of vertical when the extension is installed and assembly is reconnected. This is so that it will hold thermally conductive fluid for measuring purposes.
 - The fitting should provide easy access for insertion of a thermometer.
 - The fitting should be placed in an appropriate position so as not to hinder reinstallation of the assembly.
5. Install the 1/8" NPT test well extension fitting (Part # BC 546) into the newly drilled hole. The inside will be drilled out larger to accommodate the test well (Part # BC 407). See Figure 3.

2.1 SYSTEM SET UP

2.1.4.1 THERMAL TEST WELL AND TEMPERATURE PROBE

For Salesmaker and Dual 1 Product Highline Models

1a. Thermal Test Well Connection (cont'd) (In the case of having Pressure Regulating Valves)



ATTENTION

IF CONNECTION IS LESS THAN 5 THREADS, THEN SOLDERING IS REQUIRED. ANY OTHER CONNECTIONS MUST BE MADE USING THREAD SEALING COMPOUND SUITABLE FOR USE WITH GASOLINE.

6. Install the test well (Part # BC 407) into the extension fitting (Part # BC 546) and, after tightening, cover with the supplied protective plug (see Figure 3).
7. Re-connect the completed assembly.
8. Repeat procedure for each test well to be installed.



ATTENTION

PRESSURE REGULATING VALVE ASSEMBLY OPERATES AS A CHECK VALVE IN FORWARD FLOW CASES, AND THEREFORE DOES NOT ALTER THE TEMPERATURE OF PRODUCT BEING MEASURED.

2.1 SYSTEM SET UP

2.1.4.1 THERMAL TEST WELL AND TEMPERATURE PROBE

For Salesmaker and Dual 1 Product Highline Models

1b. Thermal Test Well Connection (cont'd) (In the case of having Feedline Tube Assemblies)

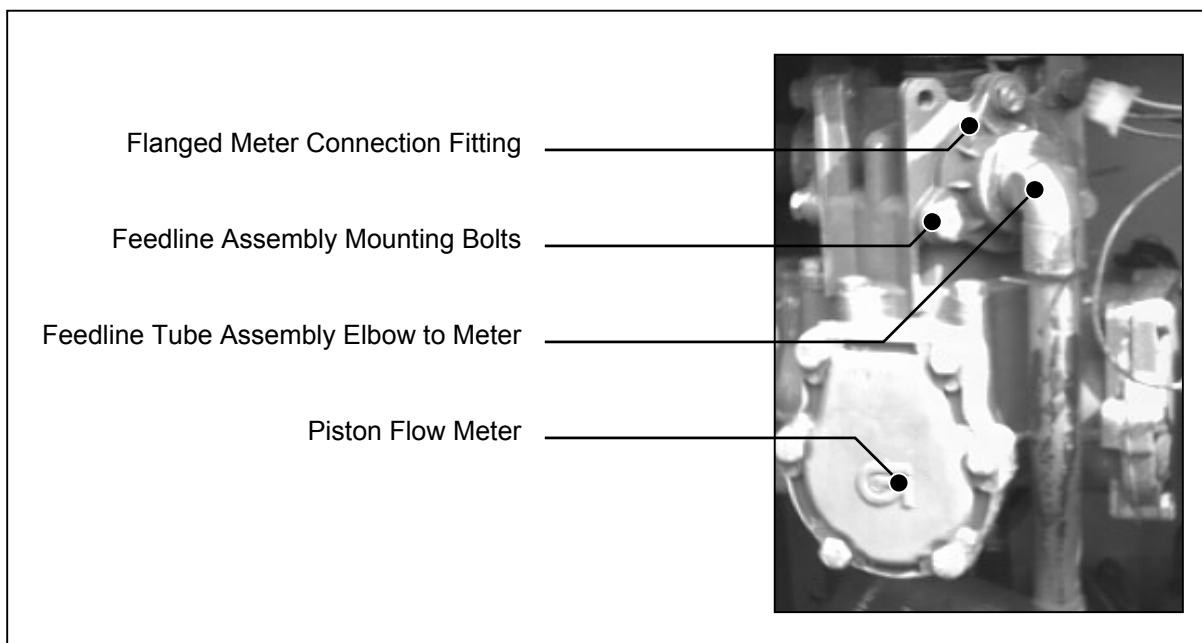
1. Remove the two lower panels to expose the main pump assembly.
2. Locate the feedline tube assemblies connected to each meter (see Figures 4 and 9).

In order to connect test wells, each complete assembly must be removed as follows:

3. Disconnect the bolts that mount the flanged fitting end of the assembly to the meter, being careful not to damage the O-ring seal between the flange and meter inlet (see Figure 4).

Figure 4

Feedline Assembly (Top)



4. Disconnect the tubing from the tee fittings on the solenoid valve assembly (see Figure 5).
5. Disconnect the bolts mounting the solenoid valve assembly to the pressure regulator (see Figure 5).

2.1 SYSTEM SET UP

2.1.4.1 THERMAL TEST WELL AND TEMPERATURE PROBE

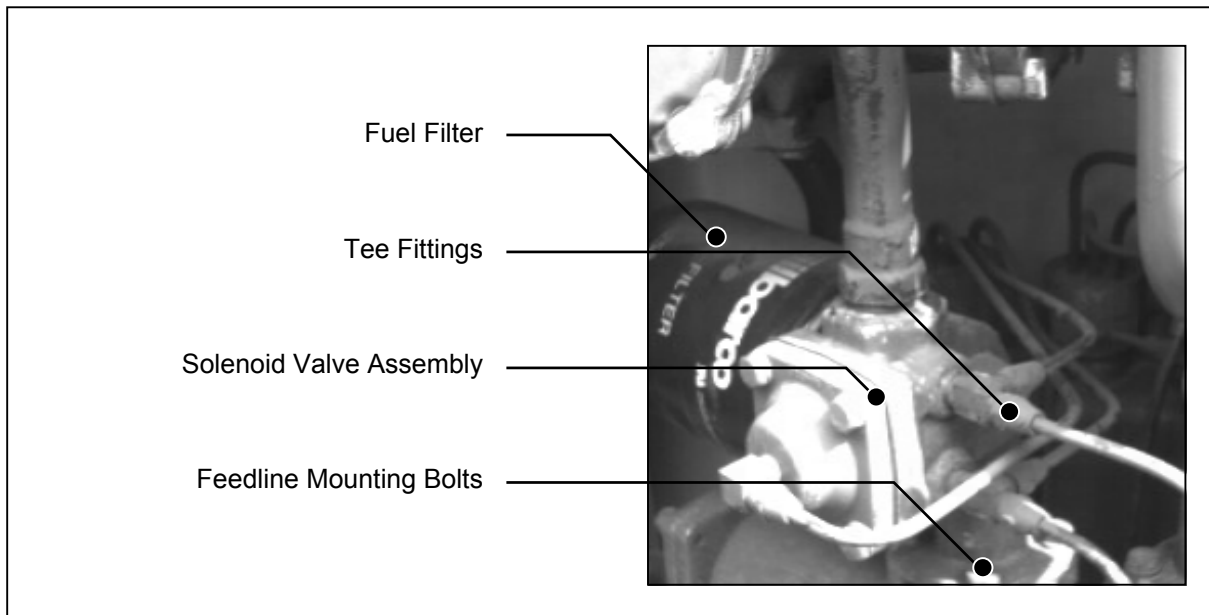
For Salesmaker or Single Product 2 Hose Highline Dispensers

1b. Thermal Test Well Connection (cont'd) (In the case of having Feedline Tube Assemblies)

6. Remove feedline tube assembly and repeat procedure for each one in the enclosure.

Figure 5

Feedline Tube Assembly (Bottom)



CAUTION

DUE TO THE PRESENCE OF COMBUSTIBLE GASSES, DO NOT DRILL PROBE HOLES OR SOLDER FITTINGS USING A POWER DRILL TO ANY PARTS DIRECTLY CONNECTED TO THE PUMP.

With the feedline assemblies removed:

7. Remove the flanged fitting from the assembly in order that the sealant is not destroyed due to soldering.

2.1 SYSTEM SET UP**2.1.4.1 THERMAL TEST WELL AND TEMPERATURE PROBE**

For Salesmaker or Single Product 2 Hose Highline Dispensers

1b. Thermal Test Well Connection (cont'd)

(In the case of having Feedline Tube Assemblies)

8. With the pipe section mounted securely, drill 1 hole of size Q or 21/64", in the middle of the elbow that is located just before the meter, and tap for 1/8" NPT (see Figure 6). The following guidelines should also be followed for installing the test well:

- The hole should be drilled so that the extension will be at an angle within 45° of vertical when the extension is installed and assembly is reconnected. This is so that it will hold thermally conductive fluid for measuring purposes.
- The fitting should provide easy access for insertion of a thermometer.
- The fitting should be placed in an appropriate position so as not to hinder reinstallation of the assembly.

9. Install and silver solder the 1/8" NPT test well extension fitting (Part # BC 546) into the newly drilled hole. The inside will be drilled out larger to accommodate the test well (Part # BC 407). See Figure 6.



ATTENTION

IF CONNECTION IS LESS THAN 5 THREADS, THEN SOLDERING IS REQUIRED. ANY OTHER CONNECTIONS MUST BE MADE USING THREAD SEALING COMPOUND SUITABLE FOR USE WITH GASOLINE.

10. Install the test well (Part # BC 407) into the extension fitting (Part # BC 546) and, after tightening, cover with the supplied protective plug.

2.1 SYSTEM SET UP

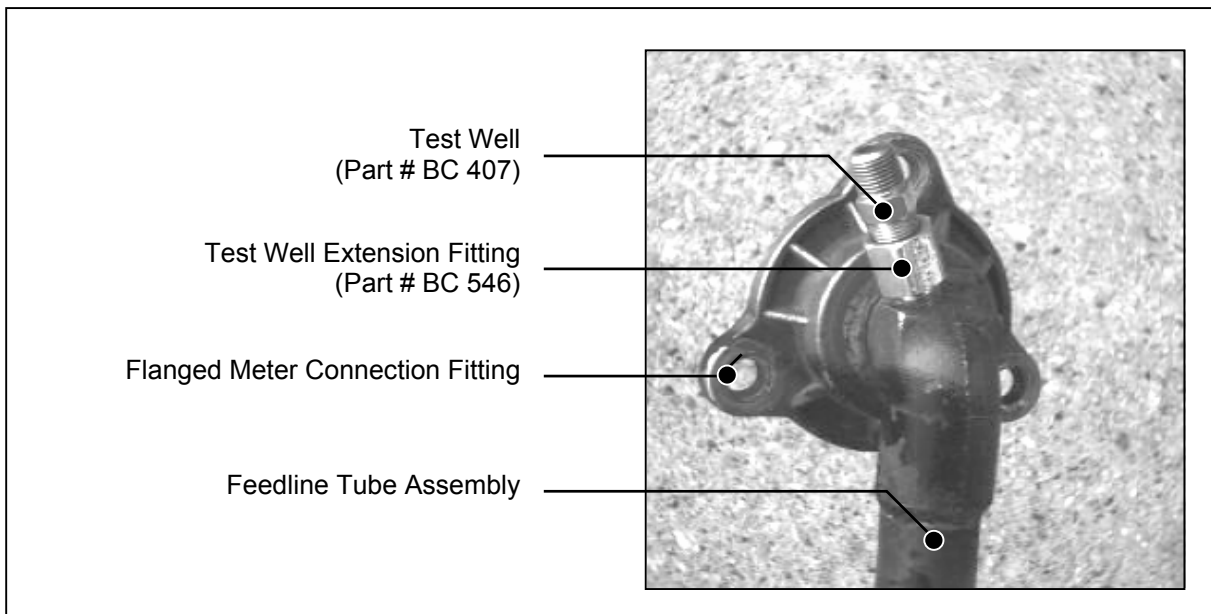
2.1.4.1 THERMAL TEST WELL AND TEMPERATURE PROBE

For Salesmaker or Single Product 2 Hose Highline Dispensers

1b. Thermal Test Well Connection (cont'd) (In the case of having Feedline Tube Assemblies)

Figure 6

Test Well Connection



11. Re-connect the feedline tube assemblies, by following steps 3 to 7 in reverse order. (Apply new thread sealing when reattaching the flanged fitting and elbow.)

INSTALLATION

2.1 SYSTEM SET UP

2.1.4.1 THERMAL TEST WELL AND TEMPERATURE PROBE

For Salesmaker or Single Product 2 Hose Highline Dispensers

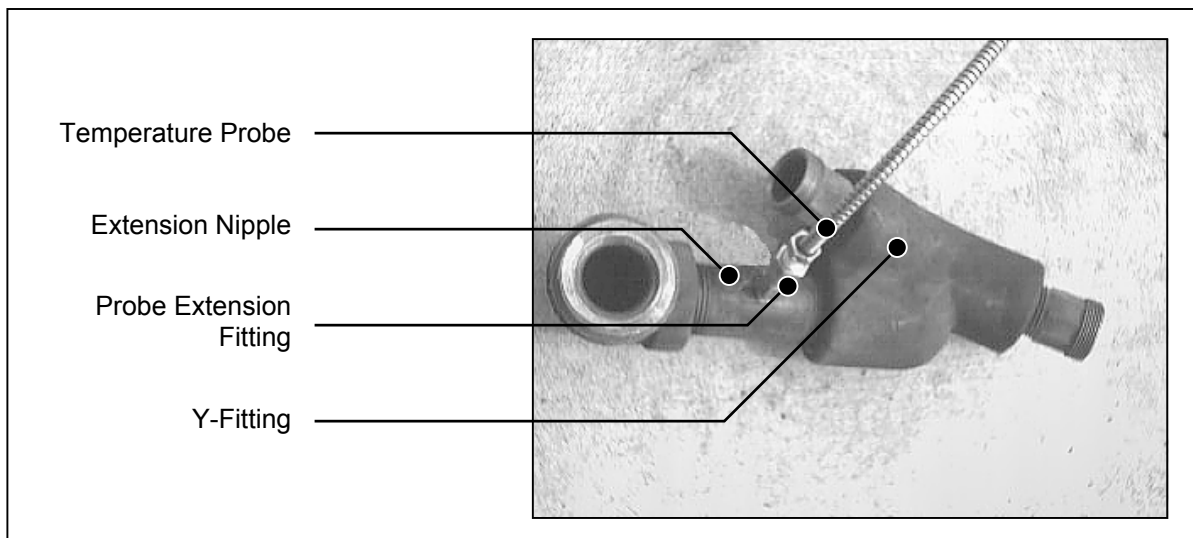
2a. Temperature Probe Connection

(In the case of a Suction Salesmaker)

1. Locate fuel supply inlet Y-fitting at the bottom of the pump assembly (see Figure 2).
2. Remove Y-fitting and pipe extension nipple.
3. With the pipe section mounted securely, drill 1 hole of size Q or 21/64", in the extension nipple, and tap for 1/8" NPT (see Figure 7).

Figure 7

Temperature Probe Connection



4. Install extension fitting (Part # BC 546) into hole, using sealing compound suitable for use with gasoline.
5. Install the temperature probe into the extension fitting.



SUGGESTION

THE TEMPERATURE PROBE END SHOULD IDEALLY BE PLACED IN THE CENTER OF FUEL FLOW INSIDE THE PIPING, TWO EXTENSION FITTINGS ARE SUPPLIED IN ORDER TO ADJUST THE POSITION OF THE PROBE.

6. Re-install the pipe section into the pump assembly.

Repeat procedure for each temperature probe

2.1 SYSTEM SET UP

2.1.4.1 THERMAL TEST WELL AND TEMPERATURE PROBE

For Salesmaker or Single Product 2 Hose Highline Dispensers

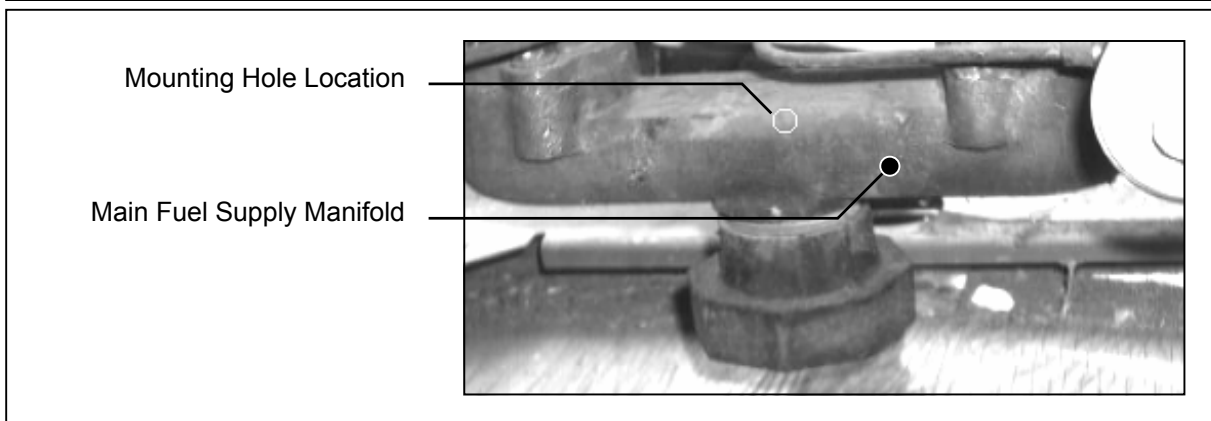
2b. Temperature Probe Connection

(In the case of having a manifold assembly)

1. Locate the fuel supply manifold at the bottom of the pump assembly, inside the main enclosure (see Figures 8 & 9).
2. Remove manifold.
3. With the manifold mounted securely, drill one hole of size Q or 21/64" in the center of the manifold body, or in a location where the probe is common to both meters (see Figure 8 for hole location).

Figure 8

Single Product Supply Manifold



SUGGESTION

THE HOLE SHOULD BE PLACED SO THAT WITH THE PROBE INSTALLED, THE MANIFOLD CAN BE RE-CONNECTED WITHOUT THE PROBE INTERFERING WITH THE FRONT PANEL OF THE ENCLOSURE.

4. Tap the hole for 1/8" NPT, and install temperature probe extension fitting using thread sealing compound suitable for use with gasoline.



SUGGESTION

THE TEMPERATURE PROBE END SHOULD IDEALLY BE PLACED IN THE CENTER OF FUEL FLOW INSIDE THE MANIFOLD, TWO EXTENSION FITTINGS ARE SUPPLIED IN ORDER TO ADJUST THE POSITION OF THE PROBE.

5. Install temperature probe inside the extension fitting, also using thread sealing compound suitable for use with gasoline.
6. Re-connect manifold to pump assembly.

INSTALLATION

2.1 SYSTEM SET UP

2.1.4.1 THERMAL TEST WELL AND TEMPERATURE PROBE

3a. Test Well and Temperature Probe Connection

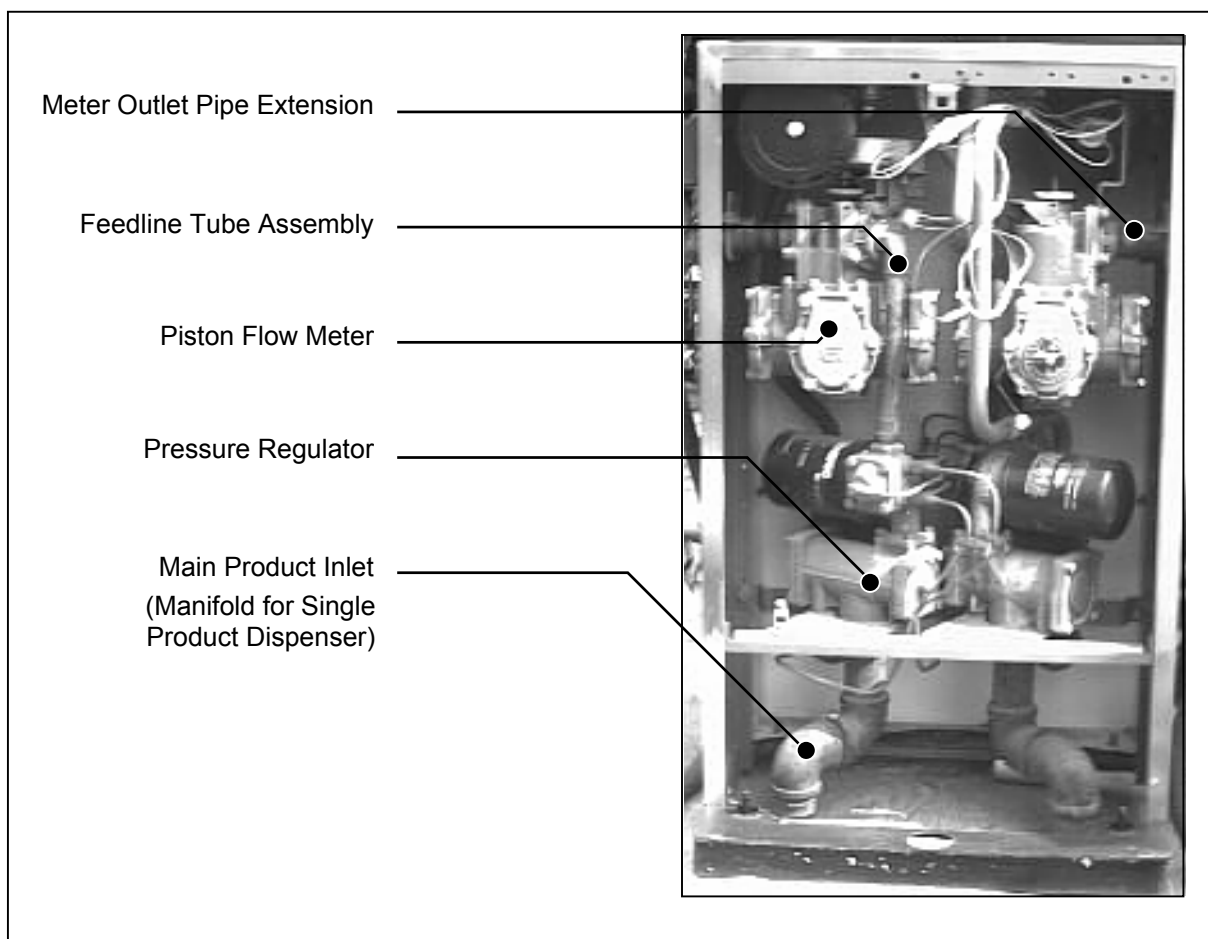
For Single highline and Dual 2 Product Highline Models

NOTE: Test well and Temperature probe will be installed in the same location for each product.

1. Locate the pipe extension nipple leading from the meters to the dispensing hoses, inside the main enclosure (see Figure 9 below).

Figure 9

Test Well and Temperature Probe Connection



Dual Product Dispenser Shown

2. Remove the pipe sections leading from each meter.
3. With pipe section mounted securely, drill two holes of size Q or 21/64" about one inch apart, near the center.

2.1 SYSTEM SET UP

2.1.4.1 Thermal Test Well and Temperature Probe

3a Test Well and Temperature Probe Connection

For Single highline and Dual 2 Product Highline Models

The following guidelines should be followed for installing the test well:

- The hole should be drilled so that the extension will be at an angle within 45° of vertical when the extension is installed and assembly is reconnected. This is so that it will hold thermally conductive fluid for measuring purposes.
 - The fitting should provide easy access for insertion of a thermometer.
 - The fitting should be placed in an appropriate position so as not to hinder reinstallation of the assembly.
4. Tap the holes for 1/8" NPT, and install temperature probe and test well extension fittings into the holes using thread sealing compound suitable for use with gasoline.



SUGGESTION

THE TEMPERATURE PROBE END SHOULD IDEALLY BE PLACED IN THE CENTER OF FUEL FLOW, TWO EXTENSION FITTINGS ARE SUPPLIED IN ORDER TO ADJUST THE POSITION OF THE PROBE.

5. Install temperature probe inside the extension fitting, using thread sealing compound suitable for use with gasoline.
6. Install the test well (Part # BC 407) into the extension fitting (Part # BC 546) and, after tightening, cover with a PVC thermal well cap. (Part #213-P2)
7. Re-connect pipe section to pump assembly.



CAUTION

DUE TO THE PRESENCE OF COMBUSTIBLE GASSES, DO NOT DRILL PROBE HOLES OR SOLDER FITTINGS TO PARTS DIRECTLY CONNECTED TO THE PUMP.



ATTENTION

IF CONNECTION IS LESS THAN 5 THREADS, THEN SOLDERING IS REQUIRED. ANY OTHER CONNECTIONS MUST BE MADE USING THREAD SEALING COMPOUND SUITABLE FOR USE WITH GASOLINE.

2.2 SYSTEM SET UP

2.1.4.2 Intrinsic Safety Barrier Mounting

(Refer to Section 3.2 for complete connection details.)

1. Once the temperature probes have been installed, remove pillar panels between sales display head and vapour barrier.



SUGGESTION

BE SURE TO LABEL ALL WIRES BEFORE DISCONNECTING SO THAT THEY MAY BE RECONNECTED PROPERLY.

Steps 2 to 5 apply to Salesmaker model only.

2. Disconnect the meter pulser wires (attached by harness terminals) and ballast wires (black and white).

With the wires disconnected, the display head can be taken off as follows:

3. Remove the sales head mounting bolts located on the bottom of the pillars.
4. Remove the bolts on side of the panel to separate the pump handle receptacles from the vapour barrier.



CAUTION

THE NEXT STEP REQUIRES TWO PEOPLE.

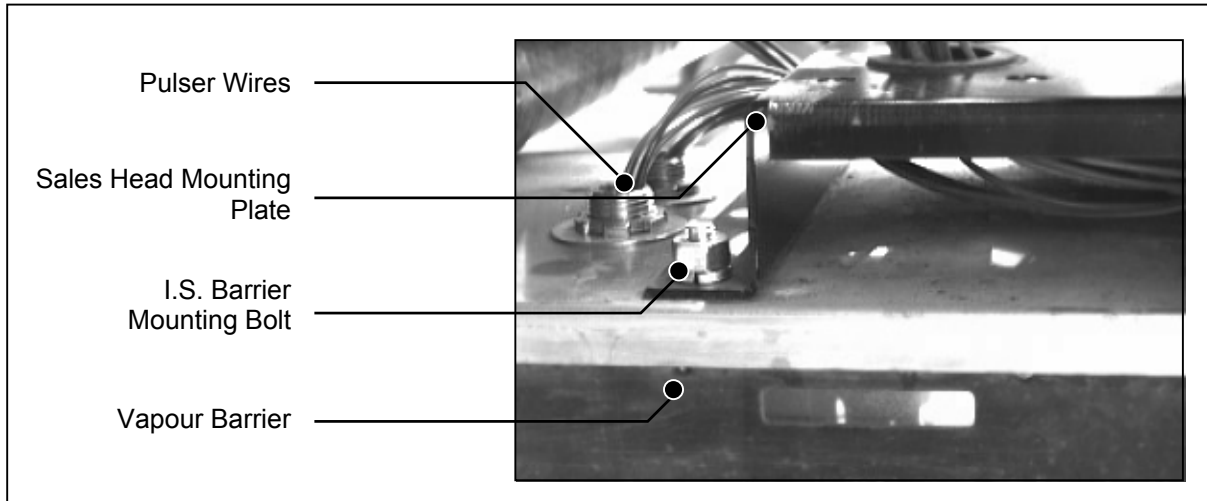
5. Slowly raise pump head.
6. Use the I.S. Barrier threaded extension to replace one of the bolts (as shown in Figure 10) on the pillar mounting plate. I.S. Barrier should be mounted above the vapour barrier.

2.1 SYSTEM SET UP

2.1.4.2 Intrinsic Safety Barrier Mounting (cont'd)

Figure 10

I.S. Barrier Mounting



7. Crimp the wires coming from the top of the I.S. Barrier to the 5 Pin 3 wire harness (2 wire harness for GTC 200-1M & 1L) that will connect to the ATC Board (part # W172 or W171). Wires will correspond by colour.
8. Replace the Sales Display Head, while running the wires through the appropriate pillars.
9. Return Sales Display Head to its normal position and tighten the bolts.
10. Connect the ground wire (Green #20 AWG) from the I.S. Barrier to the I.S. ground screw of the Pump Head Unit, on the pillar.



CAUTION

GROUND WIRE CONNECTION IS CRITICAL FOR SAFE OPERATION OF THE EQUIPMENT.

11. Run the crimp wired harness up and through to the Sales Display Head control panel to the site where the ATC board will be mounted (see Figures 1 and 13).

2.1 SYSTEM SET UP

2.1.4.3 Probe Connector Assembly Installation

1. Find a suitable mounting location to attach the probe connector assembly bracket (mounting bracket can accommodate bolt up to 5/16"). See Figure 11.
2. With connector assembly securely mounted, attach the wires from the back of the Probe Connector Assembly to the wires coming from the I.S. Barrier. (Refer to connection diagrams, Section 3.2, Figures 17 and 18.)
 - For GTC 200-1M, 1L connect the blue wires from the probe connector assembly (using the supplied crimp-on connectors) to the yellow wires from the I.S. Barrier.
 - For GTC 200-2M, 2L connect the wires from the assembly (using the supplied crimp-on connectors) to the like colored wires of the I.S. Barrier (Yellow - Product 1, Green - Product 2).

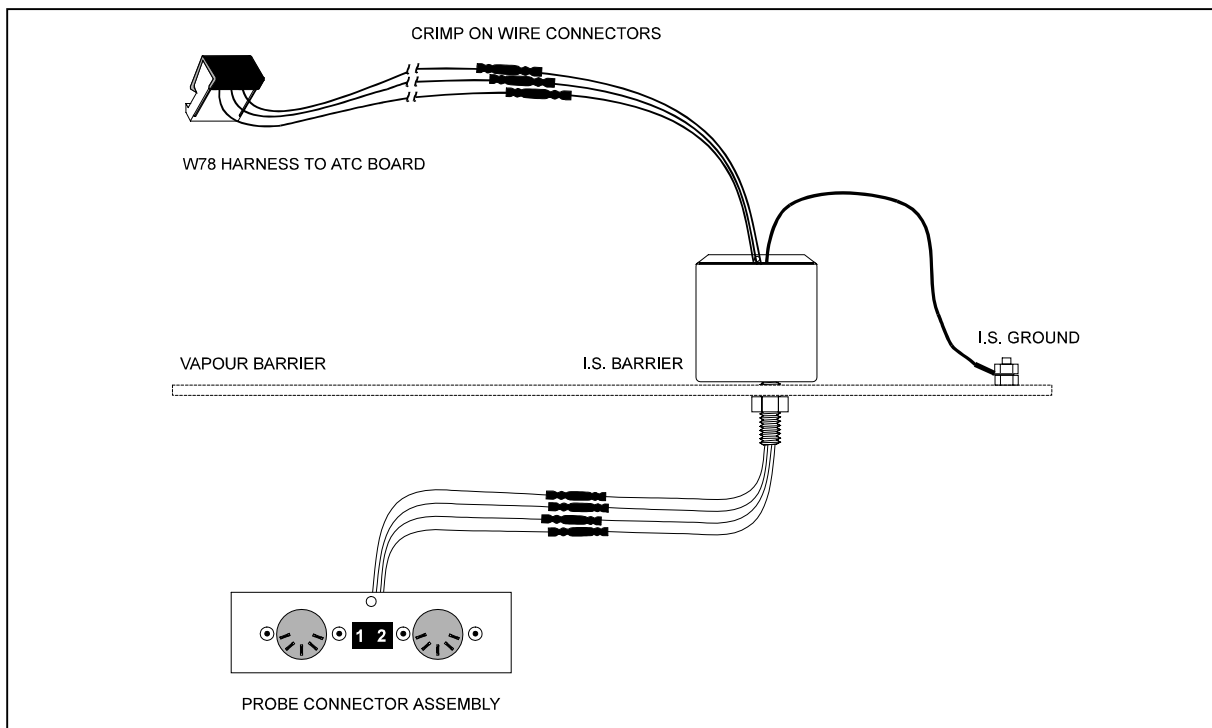


ATTENTION

CONNECTIONS MUST BE MADE USING CRIMP-ON WIRE NUTS OR BUTT CONNECTORS. THIS IS A *WEIGHTS AND MEASURES* REQUIREMENT TO MAKE THE CONNECTION TAMPER RESISTANT.

Figure 11

Probe Connector Assembly Installation



2.1 SYSTEM SET UP

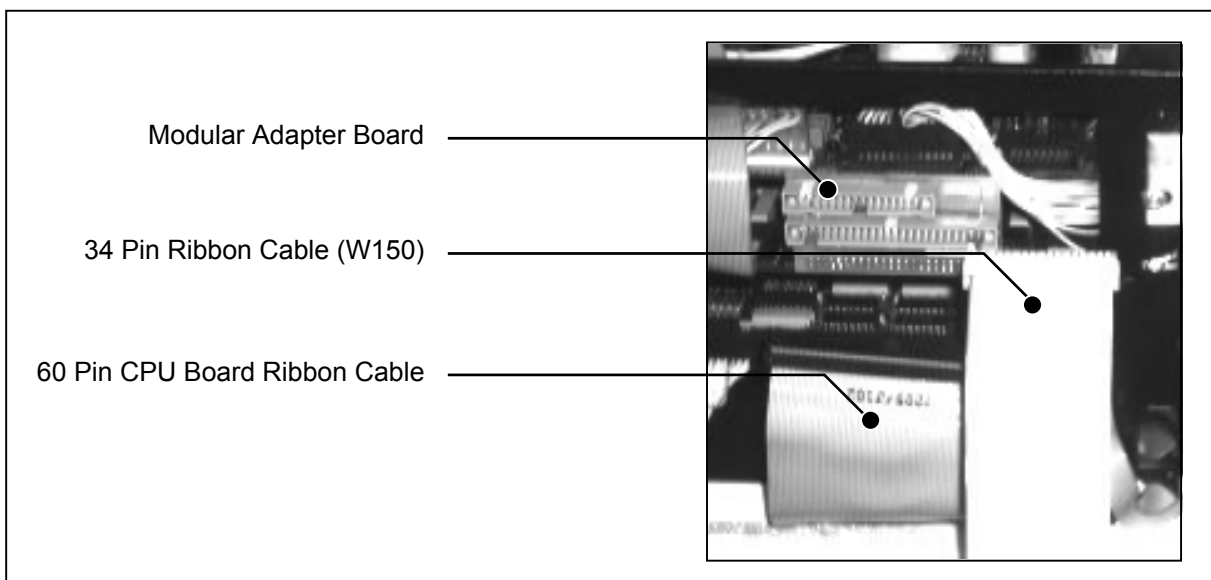
2.1.4.4 Adapter Board Connection (1M, 2M, 1MH, 2MH)

1. For Modular Pumps

1. Tilt the Operator Keypad down to expose the pump card cage (see Figure 1).
2. Detach the 60 Pin Ribbon Cable from the Logic Board in the Card Cage (see Figure 12).
3. Attach the Modular Adapter Board (Part #SKIL-428) to the Logic Board on the connector to which the cable was attached.
4. Re-attach Ribbon Cable in 60 pin receptacle on the Modular Adapter board.
5. Attach Ribbon Cable (Part # W150) from ATC board to the remaining 34 Pin, upper receptacle on Modular Adapter Board.

Figure 12

Modular Adapter Board



2.1 SYSTEM SET UP**2.1.4.4 Adapter Board Connection
(1L, 2L, 1LH, 2LH)****2. For Legacy Pumps**

1. Tilt the Operator Keypad down to expose the pump card cage (see Figure 1).
2. Detach the 16 Pin Ribbon Cable from the Legacy Logic Board in the Card Cage.
3. Attach the Legacy Adapter Board (Part #SKIL-447) to the Logic Board on the connector to which the cable was attached.
4. Re-attach Ribbon Cable in 16 pin receptacle on Legacy Adapter board.
5. Attach Ribbon Cable (Part # W150) from ATC board to the remaining 34 Pin, upper receptacle on Legacy Adapter Board.

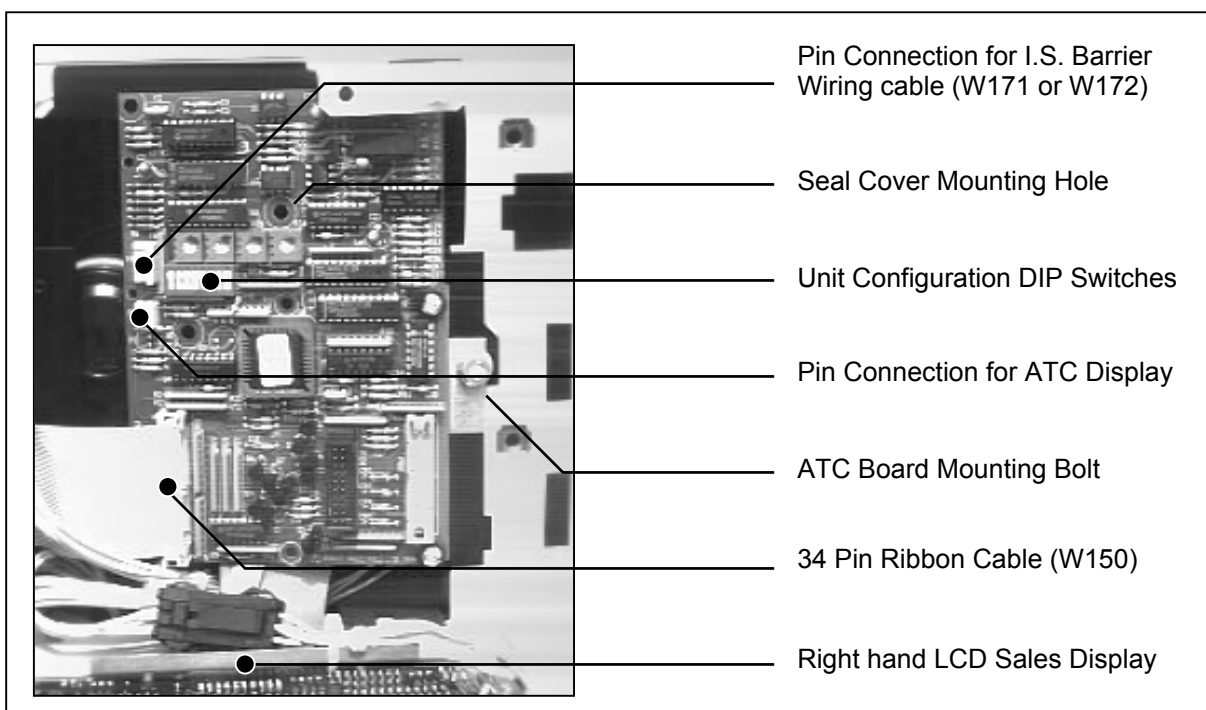
2.1 SYSTEM SET UP

2.1.4.5 ATC Board Installation

1. Open front panel of display (see Figure 1).
2. Tilt the right hand LCD sales display board by loosening plastic locks on top and pulling down. (Board will have a hinge on the bottom. See Figure 13).
3. Locate and loosen the mounting bolt on the right hand side of the mounting plate (see Figure 13).
4. Insert bracket end of ATC board between the nut and the mounting plate, then tighten, making sure tab is against the plate siding.
5. Connect the wire harness from the I.S. Barrier to the connector P5 on the ATC board.

Figure 13

ATC Control Board Mounting



6. Connect the 34 Pin Ribbon Cable (Part # W150) to the connector P1 on the lower left hand side of the board, and run to the Modular Adapter Board already attached to the Main Processing Board in the Card Cage. (For Legacy model pumps, connect to the Legacy adapter board attached to the Hydraulic Interface Board.)
7. Place seal cover (BC 1239) over DIP switch section by inserting tab through hole, then twist tie cover to board with some wire. (See Figure 13 for hole location.)

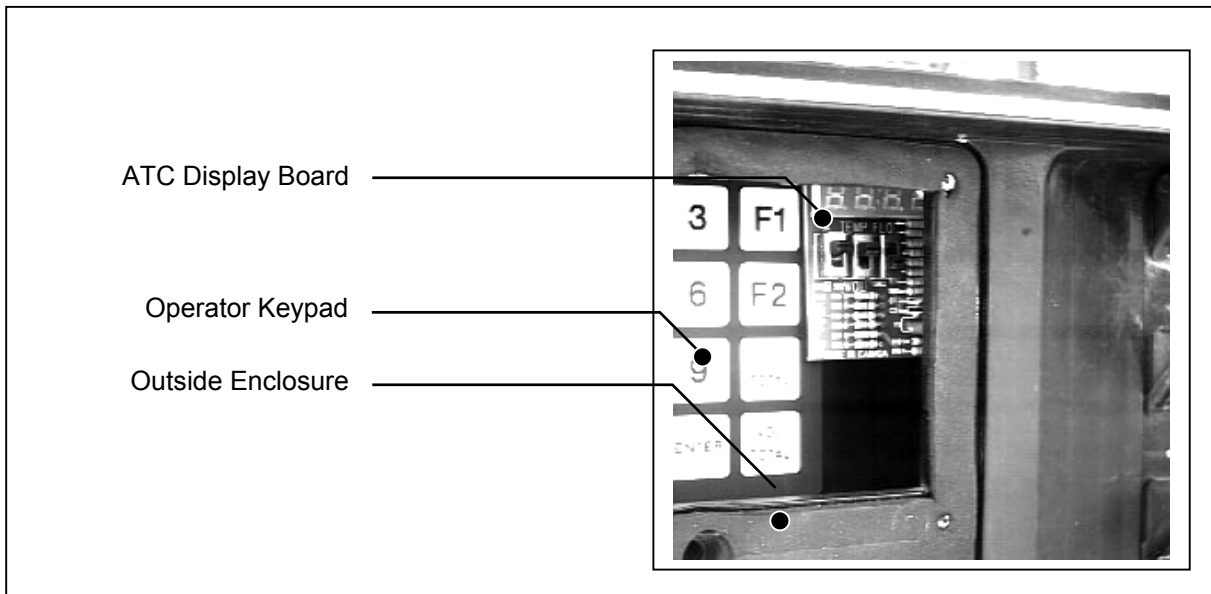
2.1 SYSTEM SET UP

2.1.4.6 ATC Display Board Installation

1. Remove backing paper to expose adhesive strips.
2. Position the display board in the upper right hand corner of operator keypad, and adhere firmly to the metal plate, making sure the display is visible when enclosure is replaced (see Figures 1 and 16).

Figure 14

ATC Display Board Mounting



3. Attach the wire harness (Part # W189) from ATC Display to connector P3 on middle left hand side of the ATC Board.

2.1 SYSTEM SET UP

2.1.4.7 ATC Display Board Functions

The three switches on the board (see Figures 15 & 16) determine what information is displayed.

- SWITCH 1** A/B Selects the temperature and uncompensated volume reading for either **A side** or **B side**.
- SWITCH 2** TEMP/VOL Selects between the product **temperature** and uncorrected **volume** of product (in normal mode).
- SWITCH 3** FLOW/NORM Selects between having the **flowrate** or the **temperature and volume** (as above) of a product displayed.

Note: The NORM position may be labelled BLEND.

Figure 15

ATC Display Board

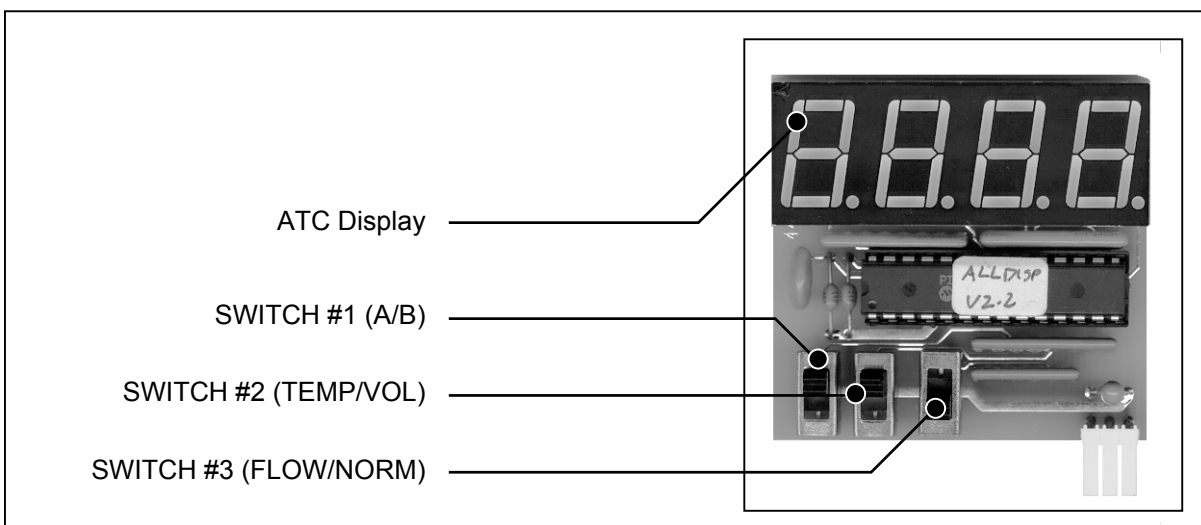
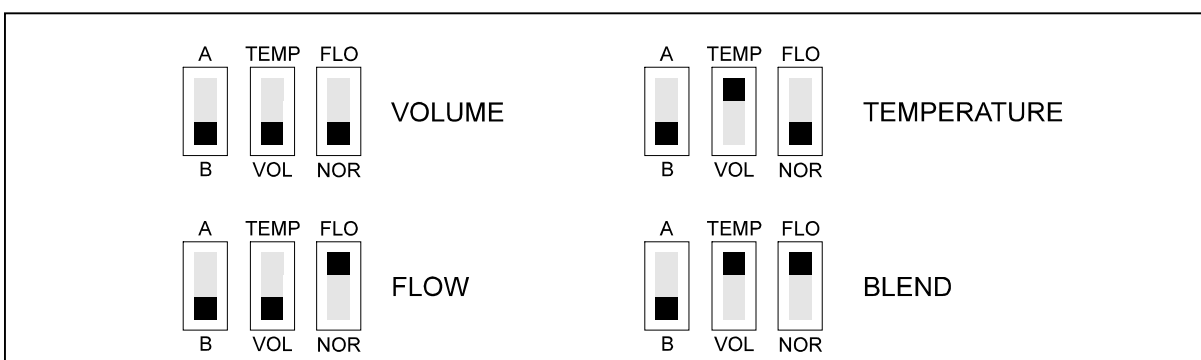


Figure 16

ATC Display Switch Settings



2.1 SYSTEM SET UP

2.1.4.8 ATC Display Board Messages

Error Messages

Error message will alternate at 1 second intervals with the information selected by the switches.

A-d	A/D Converter Error
Prob	Probe Error
PULS	Pulser Error

The priority of errors is as shown above. That is, if there is both a probe and pulser error, only a probe error is reported.

Status Messages

*Will show for 1 second when handle switch is turned on.
Must be in normal mode.*

With **TEMP** switch selected:

re1.5 Software Revision Number for the ATC Main Board Controller.

With **VOL** switch selected:

GAS	Shows product type is gasoline
dESL	Shows product type is diesel
OFF	ATC Compensation is disabled

2.2 POST INSTALLATION 2.2.1 Operation Check

If components have been installed as per the previous instructions, and pump has been re-assembled, power can be restored.

The following operations should now be verified:

- Sales displays are operational. (The pulser error code may be flashing on the price display.)
- ATC display is operational. (Display may be blank until handle switches are thrown.) If display is not operating, check to see if power is being sent from the Main Processing board in the card cage to the ATC Board by measuring for +5 VDC on the ATC Display harness. Power can be measured across pins 1 & 3 of P3.



ATTENTION

IF ERROR MESSAGES ARE FLASHING ON THE PRICE DISPLAYS, RESET THEM WITH THE HANDLE SWITCHES.

2.2 POST INSTALLATION 2.2.2 Probe Connection Verification

With the dispenser ready to be tested:

1. Make sure power is applied to the unit.
2. Ensure ATC is ON. (DIP switch #8 is ON.)
3. Initialize the system as per the Gilbarco pump requirements.
4. Set the ATC display to show volume for the side being tested.
5. Run a delivery into a test can.

The ratio of the net volume on the dispenser and the gross volume on the ATC display should be the correct VCF (Volume Correction Factor) for the temperature displayed and the product selected.

6. Now unplug the temperature probe for the product being delivered.

The pump should stop, and the ATC display should indicate a temperature probe failure.

7. Repeat the test procedure for each hose.

2.2 POST INSTALLATION 2.2.3 Installation Troubleshooting

The following tables give examples of problems that may be faced after installation, as well as their cause and solution. This troubleshooting section should be referred to before calling for technical support.

Table 2: Troubleshooting		GTC 200
PROBLEM	POSSIBLE CAUSE AND SOLUTION	
PULSER ERROR ON PUMP (ERROR CODE 20) ATC Display for that side indicates PULS or shows no error.	DIP Switches are set incorrectly. DIP switch settings are as follows (see Table 1): <ul style="list-style-type: none"> • #1-4 product types: ON for Diesel, OFF for Gasoline • #5 ON for blender and pre-modular Salesmaker quad only • #6 ON for two hose, 2 probe Highline and pre-modular Salesmaker quad • #7 ON only for pre-modular Highline, 1 or 2 hose • #8 ON to enable volume correction (ATC) 	
	Defective adapter board, ribbon cable or ATC board. Replace as necessary.	
PULSER ERROR ON PUMP (ERROR CODE 20) ATC Display for that side indicates Prob, and temperature for that side reads -50.0C.	-50.0C Reading indicates an open probe circuit. Defective I.S. barrier, probe connector assembly, associated wiring, ATC board or probe. Replace as necessary.	
	DIP switch #6 is set incorrectly. Should be ON only if dispenser is a two hose Highline using 2 probes.	

2.2 POST INSTALLATION 2.2.3 Installation Troubleshooting (Cont'd)

Table 2: Troubleshooting (Cont'd)		GTC 200
PROBLEM	POSSIBLE CAUSE AND SOLUTION	
<p>PULSER ERROR ON PUMP (ERROR CODE 20)</p> <p>ATC Display for that side indicates Prob, and temperature for that side reads 50.0C.</p>	<p>50.0C Reading indicates shorted probe circuit. Defective I.S. barrier, probe connector assembly, associated wiring, ATC board or temperature probe could be the problem. The following procedure should indicate the source:</p> <ul style="list-style-type: none"> • Unplug the probe. If it is faulty, the display temperature will switch to -50.0C. • If display doesn't change, detach the I.S. barrier plug from the ATC board. • If the temperature still reads 50.0C, then the ATC board is bad. • If the temperature changes to -50.0C, then the short is somewhere in the I.S. barrier or the associated wiring. 	
<p>PULSER ERROR ON PUMP (ERROR CODE 20)</p> <p>ATC display is dead.</p>	<p>Display may be too dim to read in daylight with front bezel off. It may be necessary to shade ATC display with hand.</p>	
	<p>Ensure that DIP switch #7 is set correctly. Should be ON only if pre-modular Highline.</p> <p>Lift one handle switch and see if display comes on. If it doesn't, flip DIP switch #8 on and off to see if display comes on.</p> <p>If it doesn't, check for 5VDC across outer two pins of ATC display. If there is no power present, defective adapter board, ribbon cable, ATC display harness or ATC board are possible causes. Replace as necessary.</p>	

2.2 POST INSTALLATION

2.2.3 Installation Troubleshooting (cont'd)

Table 2: Troubleshooting (cont'd)		GTC 200
PROBLEM	POSSIBLE CAUSE AND SOLUTION	
<p>TEMPERATURE ON ATC DISPLAY DOES NOT AGREE WITH THERMOMETER IN TEST WELL.</p> <p>With all handles in the OFF position, the temperature is still displayed.</p>	<p>DIP Switches are set incorrectly. DIP switch settings are as follows (see Table 1):</p> <ul style="list-style-type: none"> • #1-4 product types: ON for Diesel, OFF for Gasoline • #5 ON for blender and pre-modular Salesmaker quad only. • #6 ON for two hose, 2 probe Highline and on pre-modular Salesmaker quad. • #7 ON only for pre-modular Highline, 1 or 2 hose. • #8 ON to enable volume correction (ATC). 	
	<p>TEMPERATURE ON ATC DISPLAY DOES NOT AGREE WITH THERMOMETER IN TEST WELL.</p> <p>With all the handles in the OFF position, temperature displays "----".</p>	
		<p>DIP switch #6 is set incorrectly. Should be ON only if dispenser is a two hose Highline using 2 probes or for a Pre-Modular Salesmaker Quad.</p>
		<p>With DIP switch #6 OFF, both hoses on Highline use probe 1, as for a dual 1 installation or a Salesmaker quad. On a single hose pump, DIP switch #6 does not matter.</p>
		<p>A temperature altering device is located between the probe and test well, i.e. pumping unit. Relocate probe and test well.</p>
		<p>Product not flowing long enough to stabilize temperatures at test well.</p>
		<p>Probes mixed up in multiple probe installation. To check, unplug the probe. Temperature display for that product should switch to -50.0°C. If it doesn't, then another probe is plugged into the appropriate socket. Re-attach probes as necessary.</p>

2.3 CALIBRATION

2.3.1 Calibration

When the meters are calibrated in a pump with ATC enabled, it will be necessary to use the gross volume reading from the mechanical counter or ATC display. The temperature compensated volume on the pump display **cannot** be used for this purpose.



ATTENTION

BEFORE THE DISPENSER CAN BE USED IN TRADE, IN THE ATC MODE, IT MUST BE INSPECTED BY WEIGHTS AND MEASURES CANADA.

The ATC function must be disabled with the appropriate DIP switch until the pump is inspected (see Table 1).

Once the inspector approves the pump, the B256B "VOLUME CORRECTED TO 15 °C" labels should then be applied to the faceplates adjacent to the volume displays, and the plate with the AV number must be applied to the side of the dispenser.

Failure to do so could result in the station being closed down by Weights and Measures inspectors.

3.1 MAINTENANCE

3.1.1 GTC 200 List of Components

The following is an itemized account of parts supplied to complete an ATC installation for the GTC 200:

Table 3: List of Components

GILBARCO Two Product Highline Modular ATC Kit		GTC 200
QTY	PART #	DESCRIPTION
1	SKIL-425	ATC BOARD
1	SKIL-428 or SKIL-447	MODULAR ADAPTER BOARD OR SKIL-447 LEGACY ADAPTER BOARD
1	BC1022	HIGHLINE/SALESMAN/MODULAR MPD BOARD BRACKET
1	BC 1239	SEAL COVER
1	218AY00	DUAL INTRINSIC SAFETY BARRIER
1	212AY04 or 212AY05	DUAL PROBE CONNECTOR ASSEMBLY
1	W171 or W172	5 PIN 3 WIRE HARNESS FOR I.S. BARRIER
1		5/16" HEX NUT FOR I.S. BARRIER
1		5/16" FLAT WASHER FOR I.S. BARRIER
1 or 2	W199	TEMPERATURE PROBES
2 or 4	BC407	THERMAL WELLS
2 or 4	120B 02X02	EXTENSION FITTINGS
2 or 4	213P-2	PVC THERMAL WELL CAPS
1	W150	34 PIN RIBBON CABLE
1	SKIL-432	ATC DISPLAY BOARD
4	BC256B	BLACK "VOLUME CORRECTED TO 15° C" LABELS
1	BC1058	SERIALIZED WEIGHTS & MEASURES NAMEPLATE
4 or 6		18-22 AWG CRIMP SPLICES
1	W189	3 WIRE ATC DISPLAY HARNESS
2 or 4	BC 546	120-B 1/8" NPT ADAPTER DRILLED OUT TO 17/64" I.D.
1	212KT04	INSTALLATION MANUAL

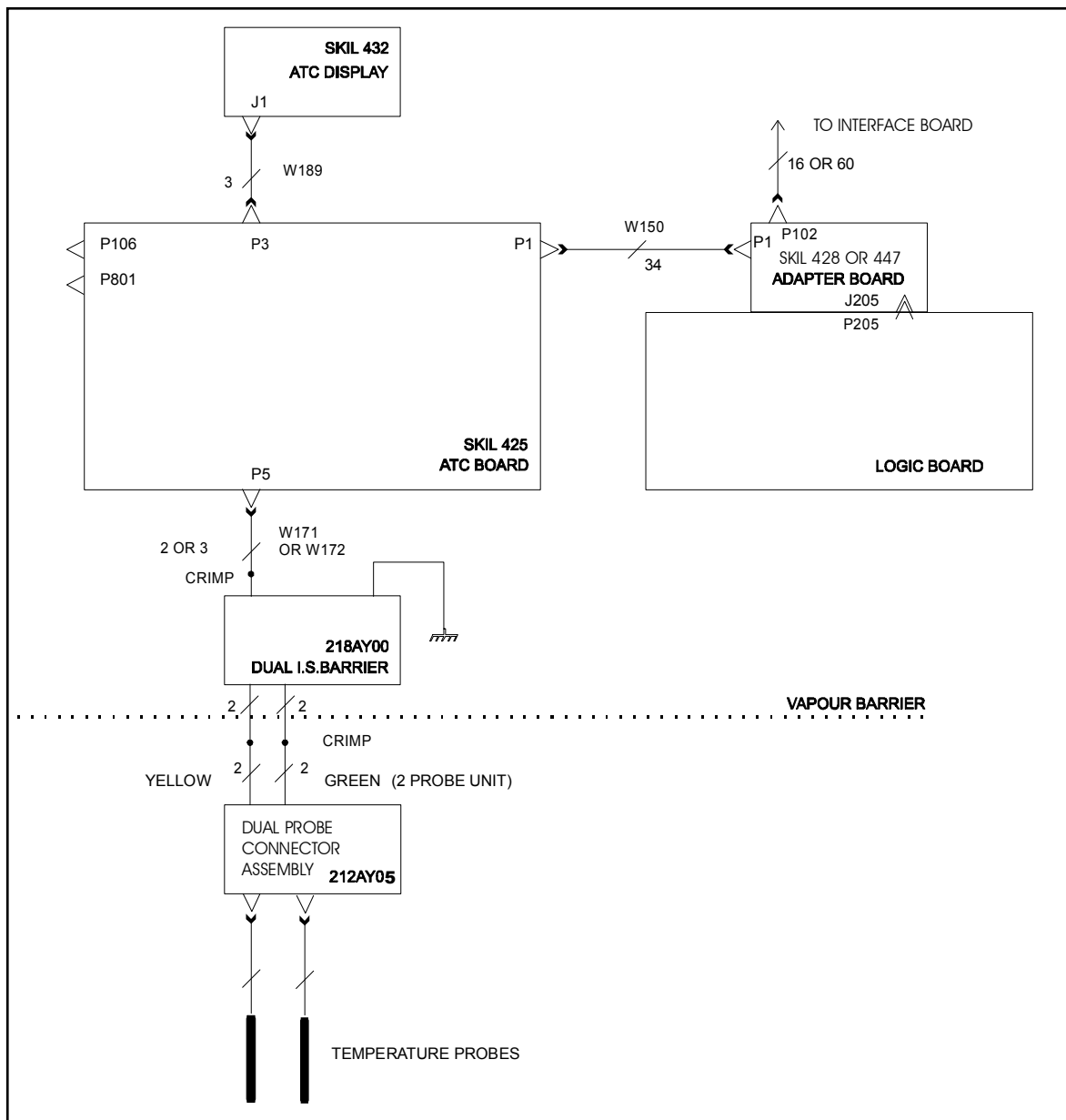
3.1 CONNECTION DIAGRAMS

3.2.1 GTC 200

The following diagram shows connections for the GTC 200. Refer to preceding parts listing for description of components.

Figure 17

GTC 200





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